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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/510,151

05/30/2006

Kia Silverbrook

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SILVERBROOK RESEARCH PTY LTD  
393 DARLING STREET  
BALMAIN, 2041  
AUSTRALIA

EXAMINER

HUFFMAN, JULIAN D

ART UNIT

PAPER NUMBER

2853

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/510,151	<b>Applicant(s)</b> SILVERBROOK, KIA	
	<b>Examiner</b> Julian D. Huffman	<b>Art Unit</b> 2853	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 April 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 4-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 4-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>5/6/08, 5/11/08</u>   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 22 April 2008 has been entered.

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 4-19 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-16 of U.S. Patent No. 6,679,584 B2 in view of Oda (JP 3-147900) and Sharma (6,276,782 B1).

Claims 1-16 of the patent clearly recite all of the limitations found in claims 4-20 of the application with the exception of a feed mechanism positioned on the support structure for feeding a print medium through the printing zone, the feed mechanism including a media roll for carrying print media to be provided to the printing zone and a take up spool configured to receive printed print media from the printing zone, wherein the feed mechanism is positioned on the support structure so that the take up spool is located beneath the media roll, wherein the feed mechanism is positioned on the support structure so that the media roll is located between the take up spool and the carrier and a MEMS system with actuator arms to eject ink.

Oda discloses the claimed feed mechanism.

Sharma discloses the claimed MEMS actuator.

It would have been obvious to one having ordinary skill in the art at the time of the invention to provide the media feed mechanism and support structure of Oda to support the print head structure of the invention claimed in the patent for the purpose of enabling feed of a roll paper while preventing the paper from being caught in a roller (abstract) and to further provide a media tray for storage between the legs of the support structure so as to provide a way to store media conveniently in the printer housing.

It would have been obvious to one having ordinary skill in the art at the time of the invention to provide the MEMS actuator of Sharma in the patent for the purpose of enabling ejection of higher viscosity inks.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4-10 and 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto et al. (U.S. 6,467,870 B2) in view of Oda (JP 3-147900) and Sharma (6,276,782 B1).

Matsumoto et al. discloses :

With regards to claims 1-3, a method of pagewidth printing, the method comprising the steps of:

feeding a print medium through a printing zone; and  
ejecting drops of ink at a rate from a print assembly on to the print medium in the printing zone to generate an image on the print medium.

With regards to claim 4, a print assembly for pagewidth inkjet printing, the print assembly comprising

an elongate carrier (14) that is mountable on a support structure of a printer in an operative position with respect to a platen of the printer;

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a number of printhead chips (22) that are positioned on the carrier, the printhead chips together defining a printhead that is configured to eject drops into a printing zone defined between the printhead and the platen of the printer; and

control circuitry that is also positioned on the carrier and that is configured to control operation of the printhead chips (fig. 2, element 38, column 7, lines 28-31 and 41-45).

With regards to claim 10, this limitation does not further limit the structure of the claimed device.

With regards to claim 16, an inkjet printer that comprises

a support structure;

a platen positioned in the support structure (column 1, lines 12-22);

a print assembly positioned operatively with respect to the platen, the print assembly comprising an elongate carrier (14);

a number of printhead chips (22) positioned on the carrier, the printhead chips together defining a printhead that is configured to eject drops into a printing zone defined between the printhead and the platen; and

control circuitry that is also positioned on the carrier and that is configured to control operation of the printhead chips (fig. 2, element 38, column 7, lines 28-31 and 41-45); and

a feed mechanism positioned on the support structure for feeding a print medium through the printing zone (column 7, lines 46-51).

Matsumoto et al. disclose that the number of head chips is not limited (column 6, lines 23-26).

Matsumoto et al. disclose CMOS driver circuitry on each printhead chip which functions as control circuitry for ejecting all of the nozzles to achieve page width printing (fig. 2, element 38, column 7, lines 28-31 and 41-45).

Matsumoto et al. does not disclose ejecting drops at a rate of at least twenty billion drops per second, or the printhead chips together incorporating at least two hundred thousand nozzle arrangements, or between forty and one hundred printhead chips positioned on the carrier.

Matsumoto et al. does not disclose a feed mechanism positioned on the support structure for feeding a print medium through the printing zone, the feed mechanism including a media roll for carrying print media to be provided to the printing zone and a take up spool configured to receive printed print media from the printing zone, wherein the feed mechanism is positioned on the support structure so that the take up spool is located beneath the media roll, wherein the feed mechanism is positioned on the support structure so that the media roll is located between the take up spool and the carrier.

Matsumoto et al. does not disclose a media tray configured to store the media roll positioned between a pair of legs of the support structure.

Matsumoto et al. does not disclose a MEMS system with actuator arms to eject ink.

Oda discloses a feed mechanism positioned on a support structure with legs for feeding a print medium through a printing zone (figs. 2 and 5), the feed mechanism including a media roll (20) for carrying print media to be provided to the printing zone and a take up spool (22) configured to receive printed print media from the printing zone, wherein the feed mechanism is positioned on the support structure so that the take up spool is located beneath the media roll (fig. 4, the take up spool 22 is located under the media roll 20), wherein the feed mechanism is positioned on the support structure so that the media roll is located between the take up spool and the carrier (fig. 2, the media roll is between the support structure near the top of legs 4 and 6 and the take up spool).

Sharma discloses a MEMS system with actuator arms to eject ink (fig. 2).

The examiner takes official notice that it is well known in the art to provide paper storage in printing devices between the supporting legs, for example, doors near the base of copiers that open to reveal compartments that store print media and the like.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide, in the invention of Matsumoto et al., a larger number of nozzle arrangements, such that at least twenty billion drops per second may be ejected. The reason for performing the modification would have been to select the number of nozzle arrangements and print head chips to provide the desired size, number of pixels and resolution (column 6, lines 23-26).



It would have been obvious to one having ordinary skill in the art at the time of the invention to provide the media feed mechanism and support structure of Oda to support the print head structure of Matsumoto et al. for the purpose of enabling feed of a roll paper while preventing the paper from being caught in a roller (abstract) and to further provide a media tray for storage between the legs of the support structure so as to provide a way to store media conveniently in the printer housing.

It would have been obvious to one having ordinary skill in the art at the time of the invention to replace the thermal actuators of Matsumoto et al. with the MEMS thermal bend actuator arm of Sharma for the purpose of enabling the device to eject high viscosity inks.

Claims 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto et al. in view of Oda and Sharma as applied above and further in view of Fabbri (U.S. 6,068,367).

Matsumoto et al. disclose CMOS driver circuitry on each printhead chip which functions as control circuitry (fig. 2, element 38, column 7, lines 28-31 and 41-45).

Matsumoto et al. further discloses a micro electromechanical system since the device converts electrical energy into mechanical energy to propel and ink droplet, and the device structure is on the micro scale.

Matsumoto et al. as modified by Oda do not expressly disclose control circuitry and CMOS driver circuitry provide on each printhead chip.

Fabbri discloses providing extensive control circuitry in addition to driver circuitry on each printhead chip in a page width printer (column 5, lines 36-61).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to, in the invention of Matsumoto et al., further provide control circuitry on each printhead chip. The reason for performing the modification would have been to, as taught by Fabbri, simplify the structure of the lines used to connect the printhead chips (column 5, lines 55-57).

### ***Response to Arguments***

Applicant's arguments filed 22 April 2008 have been fully considered but they are not persuasive.

Applicant states that a terminal disclaimer was enclosed. However, no terminal disclaimer was received. Accordingly, a double patenting rejection remains.

Applicant argues that Matsumoto discloses thermal actuators and not MEMS actuator arms.

However, Sharma discloses actuator arms and cures this deficiency in Matsumoto.

Applicant argues that the cited art does not disclose a flexible PCB. However, since all PCB's are flexible to some degree, a flexible PCB is disclosed.

Applicant argues that Oda does not disclose a media tray storing a media roll between a pair of support legs. However, as stated in the prior rejection and reiterated herein, storing media between a pair of support legs is well known in the art, for example in photocopiers or the like. Oda was never relied upon to disclose the claimed media tray storing the claimed media roll.

Applicant argues that no motivation is provided for the combination and the examiner is using hindsight. However, motivation is provided for the combination, thus the rejection is not the product of hindsight, but rather is based on the teachings of the prior art and the knowledge of one having ordinary skill in the art at the time of the invention.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julian D. Huffman whose telephone number is (571) 272-2147. The examiner can normally be reached on 10:00a.m.-6:30p.m. Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Julian D. Huffman/  
Primary Examiner, Art Unit 2853